

JAPANESE JOURNAL OF
ECONOMICS

<400>	1						
ggcaccgagga	tcaggaaggg	ggtgcaagag	ggttagtgat	tggggagcag	aaggggtcct		60
aaagatcgct	ctgggaaaag	ggaaggatgc	cgctcttctt	ccggaagcgg	aaaccctagt		120
aggaggtctg	gaaacgcctg	gagtaccaga	tgtgtttggc	aaaagaagct	ggggcagatg		180
acattctcga	catctctaaa	tgtgagctct	cagagattcc	atttgagctt	tttgcaacat		240
gcaaagttct	gcagaagaag	gtgctgatcg	tccacacgaa	tcacctcact	tccttgcttc		300
ccaaatcctg	cagcctcctg	agtctggcaa	ccattaaggt	tctagatctc	cacgataatc		360
agctgacagc	ccttcctgac	gatctggggc	agctgactgc	cctccaggtc	ttaaactgtg		420
aaaggaatca	actgatgcag	ctcccacggt	ccattgggaa	cctgaccag	ctccagactc		480
tcaatgtaa	agacaacaag	ctgaaggagc	tccagacac	cgtgggggag	cttcgaagcc		540
tgcgtaccct	caacatcagt	ggaaacgaga	tccagagatt	gccgcagatg	ctggctcacg		600
ttcgaaccct	ggagatgctg	agccttgacg	cctcggccat	ggtctacccg	ccgcgggagg		660
tgtgtggtgc	cggcactgcg	gccatcttgc	agttcctctg	caaagagtca	gggctggaat		720
actaccccc	ttctcagtac	ttgctgccaa	ttctggagca	agatggaatc	gagaactctc		780
gggacagccc	tgatgggccc	acggacagat	tctcaaggga	ggagttagag	tggcagaaca		840
ggttctcaga	ctatgagaag	aggaaggaac	agaagatgct	ggagaaactc	gagtttgaac		900
ggcgcctgga	actggggcag	cgggagcaca	cccagctcct	tcagcagagc	agcagccaga		960
aggatgagat	ccttcagacg	gtcaaggagg	agcagtcctg	gctggagcag	ggcctgagtg		1020
agcaccagcg	ccacctcgac	gcagagcggc	agcggctgct	ggagcagctg	aagcagacgg		1080
aacagaacat	ttccagcccg	atccagaagc	tgtctcagga	caatcagaga	caaaagaaaa		1140
gctccgagat	tttgaaatcg	ctggaaaatg	aaagaataag	aatggaacag	ttgatgtcca		1200
taaccaggga	ggagactgag	agcctgcggc	gacgtgacgt	tgcctccgcc	atgcagcaga		1260
tgctgactga	gagctgtaag	aaccggctca	tccagatggc	ctacgaatct	cagaggcaga		1320
acttggtcca	gcaggcctgt	tccagcatgg	ccgaaatgga	tgaacgattc	cagcagattc		1380
tgtcgtggca	gcaaatggat	cagaacaaag	ccatcagcca	gatcctgcag	gagagcgcgga		1440
tgcagaaggc	tgcgttcgag	gcactccagg	tgaagaaaaga	cctgatgcat	cggcagatca		1500
ggagccagat	taagttaata	gaaactgagt	tattgcagct	gacacagctg	gagttaaaga		1560
ggaagtccct	ggacacagag	tacttccagg	agatgatctc	ggaacagcgc	tgggccctca		1620

```

gtccctgct ccagcagctg ctcaaagaga agcagcagcg agaggaagag ctccgggaaa 1680
tcctgacgga gttagaagcc aaaagtgaag ccaggcagga aaattactgg ctgattcagt 1740
atcaacggct ttgtaaccag aagcccttgt ccttgaagct gcaagaagag gggatggagc 1800
gccagctggt ggccctcctg gaggagctgt cggctgagca ctacctgccc atctttgcgc 1860
accaccgcct ctactggac ctgctgagcc aaatgagccc aggggacctg gccaaggtgg 1920
gcgtctcaga agctggcctg cagcacgaga tcctccggag agtccaggaa ctgctggatg 1980
cagccaggat ccagccagag ctgaaaccac caatgggtga ggtcgtcacc cctacggccc 2040
cccaggagcc tcctgagtct gtgaggccat ccgctcccc tgcagagctg gaggtgcagg 2100
cctcagagtg tgctgtgtgc ctggaacggg agggccagat gatcttcctc aactgtggcc 2160
acgtctgctg ctgccagcag tgctgccagc cactgcgcac ctgcccgtg tgccgccagg 2220
acatcgccca gcgcctccgc atctaccaca gcagctgagt gctgcccgcc cacctgggcc 2280
tggtcctagc cctgcctcgg ccactgtgag ccccgggctc ctgctcagcc ttgtgccagc 2340
cagactcgta tgaggctccc ccctgccctg ggccccttcc ccactgcccc ggagccccc 2400
tcctaagctc caagcatgtc tgggccaggc agaggtgtct ctcattccatg acaccaccag 2460
tctgaatggt cctgggggct ggggctggag aggccgtgc accaccacc gagcctggga 2520
gccagcgtcc cagcctaata acggatctgc tgcctcccag ctgtcttgac tgaaggccac 2580
cgcccctgca ggagcttggg tcctcatctg ggggccatgc acaggcccggt cccaccctgc 2640
atgtgggaag ggagcaggag ggcctggctg ggtgagggga ggccttcctg ggaaggcgtg 2700
tggtgcaggc ctgtgctcac agtggcacca gcaaccctgg gtctccctct ctgctgctcc 2760
ccagaacccc ggggccctcc tgctctccac aactgtccct ccttacccca ttagctcga 2820
tccgaagcag gagtgtcaat aaacctgtct tcagtgcgaa aaaaaaaaaa aaaaaaaaaa 2880
aaaaaaaaa aaa 2893

```

```

<210> 2
<211> 723
<212> PRT
<213> Homo sapiens

```

```
<400> 2
```

```
Met Pro Leu Phe Phe Arg Lys Arg Lys Pro Ser Glu Glu Ala Arg Lys
1 5 10 15
```

```
Arg Leu Glu Tyr Gln Met Cys Leu Ala Lys Glu Ala Gly Ala Asp Asp
20 25 30
```

```
Ile Leu Asp Ile Ser Lys Cys Glu Leu Ser Glu Ile Pro Phe Gly Ala
35 40 45
```

```
Phe Ala Thr Cys Lys Val Leu Gln Lys Lys Val Leu Ile Val His Thr
50 55 60
```

```
Asn His Leu Thr Ser Leu Leu Pro Lys Ser Cys Ser Leu Leu Ser Leu
65 70 75 80
```

```
Ala Thr Ile Lys Val Leu Asp Leu His Asp Asn Gln Leu Thr Ala Leu
85 90 95
```

Pro Asp Asp Leu Gly Gln Leu Thr Ala Leu Gln Val Leu Asn Val Glu
 100 105 110

Arg Asn Gln Leu Met Gln Leu Pro Arg Ser Ile Gly Asn Leu Thr Gln
 115 120 125

Leu Gln Thr Leu Asn Val Lys Asp Asn Lys Leu Lys Glu Leu Pro Asp
 130 135 140

Thr Val Gly Glu Leu Arg Ser Leu Arg Thr Leu Asn Ile Ser Gly Asn
 145 150 155 160

Glu Ile Gln Arg Leu Pro Gln Met Leu Ala His Val Arg Thr Leu Glu
 165 170 175

Met Leu Ser Leu Asp Ala Ser Ala Met Val Tyr Pro Pro Arg Glu Val
 180 185 190

Cys Gly Ala Gly Thr Ala Ala Ile Leu Gln Phe Leu Cys Lys Glu Ser
 195 200 205

Gly Leu Glu Tyr Tyr Pro Pro Ser Gln Tyr Leu Leu Pro Ile Leu Glu
 210 215 220

Gln Asp Gly Ile Glu Asn Ser Arg Asp Ser Pro Asp Gly Pro Thr Asp
 225 230 235 240

Arg Phe Ser Arg Glu Glu Leu Glu Trp Gln Asn Arg Phe Ser Asp Tyr
 245 250 255

Glu Lys Arg Lys Glu Gln Lys Met Leu Glu Lys Leu Glu Phe Glu Arg
 260 265 270

Arg Leu Glu Leu Gly Gln Arg Glu His Thr Gln Leu Leu Gln Gln Ser
 275 280 285

Ser Ser Gln Lys Asp Glu Ile Leu Gln Thr Val Lys Glu Glu Gln Ser
 290 295 300

Arg Leu Glu Gln Gly Leu Ser Glu His Gln Arg His Leu Asp Ala Glu
 305 310 315 320

Arg Gln Arg Leu Gln Glu Gln Leu Lys Gln Thr Glu Gln Asn Ile Ser
 325 330 335

Ser Arg Ile Gln Lys Leu Leu Gln Asp Asn Gln Arg Gln Lys Lys Ser
 340 345 350

Ser Glu Ile Leu Lys Ser Leu Glu Asn Glu Arg Ile Arg Met Glu Gln
 355 360 365

Leu Met Ser Ile Thr Gln Glu Glu Thr Glu Ser Leu Arg Arg Arg Asp
 370 375 380

Val Ala Ser Ala Met Gln Gln Met Leu Thr Glu Ser Cys Lys Asn Arg
 385 390 395 400

Leu Ile Gln Met Ala Tyr Glu Ser Gln Arg Gln Asn Leu Val Gln Gln
 405 410 415
 Ala Cys Ser Ser Met Ala Glu Met Asp Glu Arg Phe Gln Gln Ile Leu
 420 425 430
 Ser Trp Gln Gln Met Asp Gln Asn Lys Ala Ile Ser Gln Ile Leu Gln
 435 440 445
 Glu Ser Ala Met Gln Lys Ala Ala Phe Glu Ala Leu Gln Val Lys Lys
 450 455 460
 Asp Leu Met His Arg Gln Ile Arg Ser Gln Ile Lys Leu Ile Glu Thr
 465 470 475 480
 Glu Leu Leu Gln Leu Thr Gln Leu Glu Leu Lys Arg Lys Ser Leu Asp
 485 490 495
 Thr Glu Ser Leu Gln Glu Met Ile Ser Glu Gln Arg Trp Ala Leu Ser
 500 505 510
 Ser Leu Leu Gln Gln Leu Leu Lys Glu Lys Gln Gln Arg Glu Glu Glu
 515 520 525
 Leu Arg Glu Ile Leu Thr Glu Leu Glu Ala Lys Ser Glu Thr Arg Gln
 530 535 540
 Glu Asn Tyr Trp Leu Ile Gln Tyr Gln Arg Leu Leu Asn Gln Lys Pro
 545 550 555 560
 Leu Ser Leu Lys Leu Gln Glu Glu Gly Met Glu Arg Gln Leu Val Ala
 565 570 575
 Leu Leu Glu Glu Leu Ser Ala Glu His Tyr Leu Pro Ile Phe Ala His
 580 585 590
 His Arg Leu Ser Leu Asp Leu Leu Ser Gln Met Ser Pro Gly Asp Leu
 595 600 605
 Ala Lys Val Gly Val Ser Glu Ala Gly Leu Gln His Glu Ile Leu Arg
 610 615 620
 Arg Val Gln Glu Leu Leu Asp Ala Ala Arg Ile Gln Pro Glu Leu Lys
 625 630 635 640
 Pro Pro Met Gly Glu Val Val Thr Pro Thr Ala Pro Gln Glu Pro Pro
 645 650 655
 Glu Ser Val Arg Pro Ser Ala Pro Pro Ala Glu Leu Glu Val Gln Ala
 660 665 670
 Ser Glu Cys Val Val Cys Leu Glu Arg Glu Ala Gln Met Ile Phe Leu
 675 680 685
 Asn Cys Gly His Val Cys Cys Cys Gln Gln Cys Cys Gln Pro Leu Arg

690

695

700

Thr Cys Pro Leu Cys Arg Gln Asp Ile Ala Gln Arg Leu Arg Ile Tyr
 705 710 715 720

His Ser Ser

<210> 3
 <211> 2044
 <212> DNA
 <213> Mus musculus

<400> 3
 cttggtttct agaatctcga gactttgtca tcctgagttg cgtgtctttc tgaaatttaa 60
 agtttcggtg ctcaattcta tgtttgaagg agaccggaca ccagctcagc ttttgggggc 120
 caatggtttg tatctgtggc caagtcttcg gactgactgg cctaccttga ggtccacca 180
 agaatcgga catcggtgga ggacctcccc atccacagag ccagggtcca gaagagctca 240
 caccggagga tgcccctctt ctttcggaag cgaaaacca gtgaggaggc tcgaaaacgc 300
 ctggagtacc agatgtgtct ggcaaaagaa gctggggcag atgacattct cgacatctct 360
 aaatgtgagc tctctgagat tccatttggg gcttttgcaa cgtgcaaagt tctacagaaa 420
 aagtggttga ttgtccatac aaaccacctc acctccctgc ttcccaagtc ctgcagcctc 480
 ttgagccttg tcaccatcaa ggttctggat ctccatgaga accagctgac agcccttcct 540
 gatgacatgg ggcagctgac agtctgcag gtattgaatg tggaaagaaa tcaactcacg 600
 catctccctc gctctatttg gaacctgtg cagctccaga cgctcaatgt aaaagacaac 660
 aagctgaagg agcttctga caccctgggg gagctgcgga gcctgcggac actcgacatt 720
 agtgagaacg agattcagag acttccccag atgctggcgc acgtgcggac cctggagacg 780
 ctgagcctca acgccttggc aatggtctac cccccaccag aggtgtgttg cgctggcact 840
 gcggccgtgc agcagttcct ctgcaaagag tcaggactgg actattacc accttctcag 900
 tacctgctgc cagtcttga gcaagatgga gcagagaaca cccaagacag ccccgatgga 960
 cccgcaagcc gattctccag ggaggaggct gaatggcaga atcggttctc cgactacgag 1020
 aagcggaagg agcagaagat gctggagaag ctggagttcg agcgggcctt ggaccttggg 1080
 cagcgggagc acgctgagct actgcagcag agccacagcc acaaggacga gatcctgcag 1140
 acggtcaagc aggagcagac acggctagag caggacctga gcgagcgcca gcgctgtctg 1200
 gatgcagagc ggcagcagct gcaggagcag ctcaagcaga cggagcagag catcgccagc 1260
 cgcattcaga gactcctgca ggacaaccag aggcaaaaga agagttctga gattctgaaa 1320
 tcgctggaga atgagagaat aagaatggag cagttgatgt ccatcaccca ggaggagaca 1380
 gagaacctca ggcagcgtga gatcgccgcc gccatgcagc agatgctgac ggagagctgt 1440
 aagagccggc tcatccagat ggcctatgag tctcagaggc agagcctggc gcagcaggcc 1500
 tgttccagca tggtgaaat ggacaagcgg ttccagcaga ttctgtcttg gcagcagatg 1560
 gatcagaaca aagccatcag ccagatcctt caggagagtg taatgcagaa ggctgccttc 1620
 gaggtctctc aggtgaagaa ggacctgat catcggcaga tcaggaacca gattaggcta 1680
 atagaaactg agttactgca gctgacacag ctggagttaa agaggaagtc cctggacaca 1740

6

gagacgcttc aggagatggg ctcagagcag cgctgggcac tcagcaacct gctccagcag 1800
 ctcttgaaag agaagaagca gcgggaagag gaactccatg gcatcctggc ggaattagag 1860
 gccaagagcg aaacgaagca ggaaaattac tggctcatcc agtaccaacg gcttttaaac 1920
 cagaagcctt tgtccttgaa actgcaggaa gaaggcatgg agcgacggct ggtggccctg 1980
 ctggtggagc tttctgcaga gcactacctg cccctcttcg cccaccaccg catctcactg 2040
 gaca 2044

<210> 4
 <211> 116
 <212> PRT
 <213> Mus musculus

<400> 4

Met Phe Glu Gly Asp Arg Thr Pro Ala Gln Leu Leu Gly Ala Asn Gly
 1 5 10 15

Leu Tyr Leu Trp Pro Ser Leu Arg Ser Asp Trp Pro Thr Leu Arg Ser
 20 25 30

Thr Gln Glu Ser Glu His Arg Trp Arg Thr Ser Pro Ser Thr Glu Pro
 35 40 45

Gly Ser Arg Arg Ala His Thr Gly Gly Cys Pro Ser Ser Phe Gly Ser
 50 55 60

Gly Asn Pro Val Arg Arg Leu Glu Asn Ala Trp Ser Thr Arg Cys Val
 65 70 75 80

Trp Gln Lys Lys Leu Gly Gln Met Thr Phe Ser Thr Ser Leu Asn Val
 85 90 95

Ser Ser Leu Arg Phe His Leu Gly Leu Leu Gln Arg Ala Lys Phe Tyr
 100 105 110

Arg Lys Arg Cys
 115

<210> 5
 <211> 2971
 <212> DNA
 <213> Rattus norvegicus

<400> 5

ggtccagaag aactctcgca ggaggatgcc tctcttcttt cggaagcgga aacccagtga 60
 ggaagctcgg aaacgcctgg agtaccagat gtgtctggca aaagaagctg gggcagatga 120
 catccttgac atctctaagt gcgagctttc cgagattcca tttggggctt ttgcaacgtg 180
 caaagttcta cagaaaaagg tgttgattgt ccacacaaac catctcacct ccctgctgcc 240
 caagtcctgc agcctcttga gcctcgccac catcaaggtt ctggatctcc atgacaacca 300
 gctgacagcc ctctctgacg atattgggca gctgacagcc ctgcaggat tgaatgtaga 360
 aaggaatcaa ctgacacacc tcccacgctc tgttgggaac ctgctgcagc tccagaccct 420
 caacgtaaaa ggtggggaca caagccctgt gcacgttacc ctcaggcaac tccagagtca 480
 ggccaccgag tgtgaggggtg acggatcagt ctgtctccat ggcaaccaga agcagtatgt 540

ctatgagccc gagagtcaga gacttgtggg gcagaagaca gacagacaga ccatcacagt	600
gacagaacga gacaacaagc taaaggagct tccggacacc ctgggggagc tgcggagcct	660
gcgtaccctc gacatcagtg aaaatgagat ccagagactt ccccagatgc tggctcatgt	720
gcggaccctg gagatgggtc tgaacaaccc tgtggctgtc acctctgcaa agcttagtat	780
ttgtcacagt ggtaacaacc tggccgagca tcccagtcct cgctccccct gcttttgtga	840
atcaccctg tcaagccaga ctgaggagca gcagtgtctg gggaagtggc agacgctgag	900
cctcgaatgc ttgtcaatgg tctaccccc accagagggtg tgtggcgctg gcaactgcggc	960
cgtgcagcag ttctctgca aagagtcagg cctggactat taccacacct ctcagtacct	1020
gctgccagtc ctggagcaag atggagccga gaactcccag gacagccctg atggaccac	1080
acgcagattc tccagggagg aggtgaatg gcagaatcgg ttctccgact acgagaagcg	1140
aaaggagcag aagatgctgg agaagctgga gttcgagcgg cgcttgacc tcgggcagcg	1200
ggagcatgct gagctgtccc agcagagcca cagccacaag gacgagatcc tgcagacggt	1260
caagcaggag cagacacggc tcgagcaggg cctgagttag cgccagcgt gcctggatgc	1320
agaacggcag cagctgcagg agcagctcaa gcagtcggag cagagcattg ccagccgcat	1380
ccagagactc ctgcaggaca atcagaggca aaagaagagt tctgagattc tgaatacact	1440
ggagaatgag agaatacga tggagcagct gatgtccatt acccaggagg agaccgagaa	1500
cctcaggcag cgtgagatcg ccgccgccat gcagcagatg ctgaccgaga gctgtaagag	1560
ccggctcatc cagatggcct atgagtccca gaggcagagc ctggtgcagc aggcctgttc	1620
cagcatggct gaaatggaca agcggttcca gcagattctg tcatggcagc agatggacca	1680
gaacaaagcc atcagccaga tccttcagga ggctcgaatg ctgcttgagc ttgattacaa	1740
acacgcgatg tgtccagtc tgtctttgct gaaggctgtt tcttacaggc aacagcagct	1800
gaatcccatc cattttcgtt tagatgtgga gttgaggacc caggactgga ggccccctct	1860
tgtccttctg tccctggtgt ttggggctgt cctcgtccca cctgtggttt cgggtgctct	1920
tctcgtctt cagaatgcc gtcacctggc tgtttgcagt cagcgtcatg tggatgtgtc	1980
agatgagcgt ctgacctcag aacctccgtt gtcatcctc agtgtgatgc agaaggctgc	2040
attcagggtc ctccaggtaa agaaagacct cacgcacgag cagatcagga gccagattag	2100
gctaatagaa actgagttac tgcagctgac acagctggag ttaaagagga agtccctgga	2160
cacagagacg ctccagggcg gctgctcctc agctccagac acaggcttct ccggcacaca	2220
gagagccggc ccagccccag tagaacagat gtgggtccatg ggcaaaggta gctctgtgca	2280
gggcgagagg gagatggtct cagagcagcg ctgggcgctc agcaacctgc tccagcagct	2340
cctcaaagag aagaagcagc gggaagagga gtcctatggc atcctggcgg aattagaggc	2400
caagagtga acaagcagg aaaattactg gtcctccag taccaacggc ttttgaacca	2460
gaagcctttg tccttgaagc tgcaggaaga aggcagtgag cggcagctgg tggccctgct	2520
ggtggagctg tctgctgagc actacctgcc cctcttcgcc caccaccgca tcacactgga	2580
catgctgagc cggatgggtc ctggagatct ggctaagggt ggtgtctcag aagcaggcct	2640
gcaacatgaa atcctgcgaa gagcccgga cctgctggat gtggccaggg tccaaccaga	2700
gttgaaacca cccaagaatg aggtctttgg tgtctctgag cccccacag ccctcagga	2760

gcttcctgag tccgtgagac catctgcccc gccagctgaa ctggacgtgc cgacctcaga 2820
 gtgtgttgtg tgccctggaac gtgaggccca gatggtcttc ctcacctgcg gccatgtctg 2880
 ctgctgccag cagtgtctgc agccgtgcg cacctgcca ctgtgccgcc aggagatctc 2940
 ccagcgctc cggatctacc acagcagctg a 2971

<210> 6
 <211> 981
 <212> PRT
 <213> Rattus norvegicus

<400> 6

Met Pro Leu Phe Phe Arg Lys Arg Lys Pro Ser Glu Glu Ala Arg Lys
 1 5 10 15

Arg Leu Glu Tyr Gln Met Cys Leu Ala Lys Glu Ala Gly Ala Asp Asp
 20 25 30

Ile Leu Asp Ile Ser Lys Cys Glu Leu Ser Glu Ile Pro Phe Gly Ala
 35 40 45

Phe Ala Thr Cys Lys Val Leu Gln Lys Lys Val Leu Ile Val His Thr
 50 55 60

Asn His Leu Thr Ser Leu Leu Pro Lys Ser Cys Ser Leu Leu Ser Leu
 65 70 75 80

Ala Thr Ile Lys Val Leu Asp Leu His Asp Asn Gln Leu Thr Ala Leu
 85 90 95

Pro Asp Asp Ile Gly Gln Leu Thr Ala Leu Gln Val Leu Asn Val Glu
 100 105 110

Arg Asn Gln Leu Thr His Leu Pro Arg Ser Val Gly Asn Leu Leu Gln
 115 120 125

Leu Gln Thr Leu Asn Val Lys Gly Gly Asp Thr Ser Pro Val His Val
 130 135 140

Thr Leu Arg Gln Leu Gln Ser Gln Ala Thr Glu Cys Glu Gly Asp Gly
 145 150 155 160

Ser Val Cys Leu His Gly Asn Gln Lys Gln Tyr Val Tyr Glu Pro Glu
 165 170 175

Ser Gln Arg Leu Val Gly Gln Lys Thr Asp Arg Gln Thr Ile Thr Val
 180 185 190

Thr Glu Arg Asp Asn Lys Leu Lys Glu Leu Pro Asp Thr Leu Gly Glu
 195 200 205

Leu Arg Ser Leu Arg Thr Leu Asp Ile Ser Glu Asn Glu Ile Gln Arg
 210 215 220

Leu Pro Gln Met Leu Ala His Val Arg Thr Leu Glu Met Val Leu Asn
 225 230 235 240

Asn Pro Val Ala Val Thr Ser Ala Lys Leu Ser Ile Cys His Ser Gly
 245 250 255
 Asn Asn Leu Ala Glu His Pro Ser Pro Arg Ser Pro Cys Phe Cys Glu
 260 265 270
 Ser Pro Leu Ser Ser Gln Thr Glu Glu Gln Gln Cys Leu Gly Lys Trp
 275 280 285
 Gln Thr Leu Ser Leu Asp Ala Leu Ser Met Val Tyr Pro Pro Pro Glu
 290 295 300
 Val Cys Gly Ala Gly Thr Ala Ala Val Gln Gln Phe Leu Cys Lys Glu
 305 310 315 320
 Ser Gly Leu Asp Tyr Tyr Pro Pro Ser Gln Tyr Leu Leu Pro Val Leu
 325 330 335
 Glu Gln Asp Gly Ala Glu Asn Ser Gln Asp Ser Pro Asp Gly Pro Thr
 340 345 350
 Arg Arg Phe Ser Arg Glu Glu Ala Glu Trp Gln Asn Arg Phe Ser Asp
 355 360 365
 Tyr Glu Lys Arg Lys Glu Gln Lys Met Leu Glu Lys Leu Glu Phe Glu
 370 375 380
 Arg Arg Leu Asp Leu Gly Gln Arg Glu His Ala Glu Leu Leu Gln Gln
 385 390 395 400
 Ser His Ser His Lys Asp Glu Ile Leu Gln Thr Val Lys Gln Glu Gln
 405 410 415
 Thr Arg Leu Glu Gln Gly Leu Ser Glu Arg Gln Arg Cys Leu Asp Ala
 420 425 430
 Glu Arg Gln Gln Leu Gln Glu Gln Leu Lys Gln Ser Glu Gln Ser Ile
 435 440 445
 Ala Ser Arg Ile Gln Arg Leu Leu Gln Asp Asn Gln Arg Gln Lys Lys
 450 455 460
 Ser Ser Glu Ile Leu Lys Ser Leu Glu Asn Glu Arg Ile Arg Met Glu
 465 470 475 480
 Gln Leu Met Ser Ile Thr Gln Glu Glu Thr Glu Asn Leu Arg Gln Arg
 485 490 495
 Glu Ile Ala Ala Ala Met Gln Gln Met Leu Thr Glu Ser Cys Lys Ser
 500 505 510
 Arg Leu Ile Gln Met Ala Tyr Glu Ser Gln Arg Gln Ser Leu Val Gln
 515 520 525
 Gln Ala Cys Ser Ser Met Ala Glu Met Asp Lys Arg Phe Gln Gln Ile
 530 535 540

Leu Ser Trp Gln Gln Met Asp Gln Asn Lys Ala Ile Ser Gln Ile Leu
 545 550 555 560
 Gln Glu Ala Arg Met Leu Leu Ala Val Asp Tyr Lys His Ala Met Cys
 565 570 575
 Pro Val Leu Ser Leu Leu Lys Ala Val Ser Tyr Arg Gln Gln Gln Leu
 580 585 590
 Asn Pro Ile His Phe Arg Leu Asp Val Glu Leu Arg Thr Gln Asp Trp
 595 600 605
 Arg Pro Leu Phe Val Leu Leu Ser Leu Val Phe Gly Ala Val Leu Val
 610 615 620
 Pro Pro Val Val Ser Gly Ala Leu Leu Arg Leu Gln Asn Ala Ser His
 625 630 635 640
 Leu Ala Val Cys Ser Gln Arg His Val Asp Val Ser Asp Glu Arg Leu
 645 650 655
 Thr Ser Glu Pro Pro Leu Phe Ile Leu Ser Val Met Gln Lys Ala Ala
 660 665 670
 Phe Glu Ala Leu Gln Val Lys Lys Asp Leu Thr His Arg Gln Ile Arg
 675 680 685
 Ser Gln Ile Arg Leu Ile Glu Thr Glu Leu Leu Gln Leu Thr Gln Leu
 690 695 700
 Glu Leu Lys Arg Lys Ser Leu Asp Thr Glu Thr Leu Gln Gly Gly Cys
 705 710 715 720
 Ser Ser Ala Pro Asp Thr Gly Phe Ser Gly Thr Gln Arg Ala Gly Pro
 725 730 735
 Ala Pro Val Glu Gln Met Trp Ser Met Gly Lys Gly Ser Ser Val Gln
 740 745 750
 Gly Glu Arg Glu Met Val Ser Glu Gln Arg Trp Ala Leu Ser Asn Leu
 755 760 765
 Leu Gln Gln Leu Leu Lys Glu Lys Lys Gln Arg Glu Glu Glu Leu His
 770 775 780
 Gly Ile Leu Ala Glu Leu Glu Ala Lys Ser Glu Thr Lys Gln Glu Asn
 785 790 795 800
 Tyr Trp Leu Ile Gln Tyr Gln Arg Leu Leu Asn Gln Lys Pro Leu Ser
 805 810 815
 Leu Lys Leu Gln Glu Glu Gly Met Glu Arg Gln Leu Val Ala Leu Leu
 820 825 830
 Val Glu Leu Ser Ala Glu His Tyr Leu Pro Leu Phe Ala His His Arg

835 840 845
 Ile Thr Leu Asp Met Leu Ser Arg Met Gly Pro Gly Asp Leu Ala Lys
 850 855 860
 Val Gly Val Ser Glu Ala Gly Leu Gln His Glu Ile Leu Arg Arg Ala
 865 870 875 880
 Arg Asp Leu Leu Asp Val Ala Arg Val Gln Pro Glu Leu Lys Pro Pro
 885 890 895
 Lys Asn Glu Val Phe Gly Val Ser Glu Pro Pro Thr Ala Pro Gln Glu
 900 905 910
 Leu Pro Glu Ser Val Arg Pro Ser Ala Pro Pro Ala Glu Leu Asp Val
 915 920 925
 Pro Thr Ser Glu Cys Val Val Cys Leu Glu Arg Glu Ala Gln Met Val
 930 935 940
 Phe Leu Thr Cys Gly His Val Cys Cys Cys Gln Gln Cys Cys Gln Pro
 945 950 955 960
 Leu Arg Thr Cys Pro Leu Cys Arg Gln Glu Ile Ser Gln Arg Leu Arg
 965 970 975
 Ile Tyr His Ser Ser
 980
 <210> 7
 <211> 234
 <212> PRT
 <213> Homo sapiens
 <220>
 <221> misc_feature
 <223> Active portion of human Tal
 <400> 7
 Leu Lys Arg Lys Ser Leu Asp Thr Glu Ser Leu Gln Glu Met Ile Ser
 1 5 10 15
 Glu Gln Arg Trp Ala Leu Ser Ser Leu Leu Gln Gln Leu Leu Lys Glu
 20 25 30
 Lys Gln Gln Arg Glu Glu Glu Leu Arg Glu Ile Leu Thr Glu Leu Glu
 35 40 45
 Ala Lys Ser Glu Thr Arg Gln Glu Asn Tyr Trp Leu Ile Gln Tyr Gln
 50 55 60
 Arg Leu Leu Asn Gln Lys Pro Leu Ser Leu Lys Leu Gln Glu Glu Gly
 65 70 75 80
 Met Glu Arg Gln Leu Val Ala Leu Leu Glu Glu Leu Ser Ala Glu His
 85 90 95

12

Tyr Leu Pro Ile Phe Ala His His Arg Leu Ser Leu Asp Leu Leu Ser
 100 105 110

Gln Met Ser Pro Gly Asp Leu Ala Lys Val Gly Val Ser Glu Ala Gly
 115 120 125

Leu Gln His Glu Ile Leu Arg Arg Val Gln Glu Leu Leu Asp Ala Ala
 130 135 140

Arg Ile Gln Pro Glu Leu Lys Pro Pro Met Gly Glu Val Val Thr Pro
 145 150 155 160

Thr Ala Pro Gln Glu Pro Pro Glu Ser Val Arg Pro Ser Ala Pro Pro
 165 170 175

Ala Glu Leu Glu Val Gln Ala Ser Glu Cys Val Val Cys Leu Glu Arg
 180 185 190

Glu Ala Gln Met Ile Phe Leu Asn Cys Gly His Val Cys Cys Cys Gln
 195 200 205

Gln Cys Cys Gln Pro Leu Arg Thr Cys Pro Leu Cys Arg Gln Asp Ile
 210 215 220

Ala Gln Arg Leu Arg Ile Tyr His Ser Ser
 225 230

<210> 8
 <211> 77
 <212> PRT
 <213> Homo sapiens

<220>
 <221> misc_feature
 <223> Active portion of human Tal

<400> 8

Val Thr Pro Thr Ala Pro Gln Glu Pro Pro Glu Ser Val Arg Pro Ser
 1 5 10 15

Ala Pro Pro Ala Glu Leu Glu Val Gln Ala Ser Glu Cys Val Val Cys
 20 25 30

Leu Glu Arg Glu Ala Gln Met Ile Phe Leu Asn Cys Gly His Val Cys
 35 40 45

Cys Cys Gln Gln Cys Cys Gln Pro Leu Arg Thr Cys Pro Leu Cys Arg
 50 55 60

Gln Asp Ile Ala Gln Arg Leu Arg Ile Tyr His Ser Ser
 65 70 75

<210> 9
 <211> 25
 <212> DNA
 <213> Artificial sequence

<220>
 <223> Single strand DNA oligonucleotide

<400> 9
 ggaattcgtc atggcgggtgt cggag 25

<210> 10
 <211> 29
 <212> DNA
 <213> Artificial sequence

<220>
 <223> Single strand DNA oligonucleotide

<400> 10
 cctcgagtca gtagaggtca ctgagaccg 29

<210> 11
 <211> 29
 <212> DNA
 <213> Artificial sequence

<220>
 <223> Single strand DNA oligonucleotide

<400> 11
 ggaattcggg cttattcagg tcatgattg 29

<210> 12
 <211> 25
 <212> DNA
 <213> Artificial sequence

<220>
 <223> Single strand DNA oligonucleotide

<400> 12
 ccgggacatt cccacagctc cctta 25

<210> 13
 <211> 35
 <212> DNA
 <213> Artificial sequence

<220>
 <223> Single strand DNA oligonucleotide

<400> 13
 aaactgcagc cagagcagaa ctgagttctt catcc 35

<210> 14
 <211> 27
 <212> DNA
 <213> Artificial sequence

<220>
 <223> Single strand DNA oligonucleotide

<400> 14
 aaactgcagg gcacgatcca tttcctc 27

<210> 15
 <211> 19
 <212> DNA
 <213> Artificial sequence

<220>
 <223> Single strand DNA oligonucleotide

<400> 15
 cctgcagagc tggaggtgc 19

<210> 16
 <211> 20
 <212> DNA
 <213> Artificial sequence

 <220>
 <223> Single strand DNA oligonucleotide

 <400> 16
 gacgacctca cccattggtg 20

 <210> 17
 <211> 24
 <212> DNA
 <213> Artificial sequence

 <220>
 <223> Single strand DNA oligonucleotide

 <400> 17
 gtatgtatta cctctataag gcac 24

 <210> 18
 <211> 23
 <212> DNA
 <213> Artificial sequence

 <220>
 <223> Single strand DNA oligonucleotide

 <400> 18
 gggcttattc aggtcatgat tgt 23

 <210> 19
 <211> 23
 <212> DNA
 <213> Artificial sequence

 <220>
 <223> Single strand DNA oligonucleotide

 <400> 19
 cacaatcatg acctgaataa gcc 23

 <210> 20
 <211> 20
 <212> DNA
 <213> Artificial sequence

 <220>
 <223> Single strand DNA oligonucleotide

 <400> 20
 gaggacacca tccgagcctc 20

 <210> 21
 <211> 20
 <212> DNA
 <213> Artificial sequence

 <220>
 <223> Single strand DNA oligonucleotide

 <400> 21
 gaggctcgga tgggtgcctc 20

 <210> 22

<211> 22
 <212> DNA
 <213> Artificial sequence

 <220>
 <223> Single strand DNA oligonucleotide

 <400> 22
 cattcccaca gctcccttat ac 22

<210> 23
 <211> 22
 <212> DNA
 <213> Artificial sequence

 <220>
 <223> Single strand DNA oligonucleotide

 <400> 23
 gtataaggga gctgtgggaa tg 22

<210> 24
 <211> 21
 <212> DNA
 <213> Artificial sequence

 <220>
 <223> Single strand DNA oligonucleotide

 <400> 24
 ggagggtggag actacaagga c 21

<210> 25
 <211> 24
 <212> DNA
 <213> Artificial sequence

 <220>
 <223> Single strand DNA oligonucleotide

 <400> 25
 ccgggatcca tggcggtgtc ggag 24

<210> 26
 <211> 37
 <212> DNA
 <213> Artificial sequence

 <220>
 <223> Single strand DNA oligonucleotide

 <400> 26
 atagtttagc ggccgctagt cacttgtcat cgtcgtc 37

<210> 27
 <211> 26
 <212> DNA
 <213> Artificial sequence

 <220>
 <223> Single strand DNA oligonucleotide

 <400> 27
 cccaagcttg gaaggatgcc gctctt 26

<210> 28
 <211> 61
 <212> DNA
 <213> Artificial sequence

```

<220>
<223> Single strand DNA oligonucleotide

<400> 28
ggggtacccc tcatcaggca taatcgggta catcataggg atagctgctg tggtagatgc 60
g 61

<210> 29
<211> 20
<212> DNA
<213> Artificial sequence

<220>
<223> Single strand DNA oligonucleotide

<400> 29
ctcttcttgc agcttcaagg 20

<210> 30
<211> 18
<212> DNA
<213> Artificial sequence

<220>
<223> Single strand DNA oligonucleotide

<400> 30
gccaggatcc agccagag 18

<210> 31
<211> 29
<212> DNA
<213> Artificial sequence

<220>
<223> Single strand DNA oligonucleotide

<400> 31
cctcaactgt ggcgccgtct gctgctgcc 29

<210> 32
<211> 29
<212> DNA
<213> Artificial sequence

<220>
<223> Single strand DNA oligonucleotide

<400> 32
ggcagcagca gacggcgcca cagttgagg 29

<210> 33
<211> 19
<212> DNA
<213> Artificial sequence

<220>
<223> Single strand DNA oligonucleotide

<400> 33
cctgcagagc tggaggtgc 19

<210> 34
<211> 20
<212> DNA
<213> Artificial sequence

```



```

<220>
<223> Single strand DNA oligonucleotide

<400> 34
gacgacctca cccattggtg 20

-

<210> 35
<211> 19
<212> DNA
<213> Artificial sequence

-

<220>
<223> Single strand DNA oligonucleotide

-

<400> 35
gaggagctgt cggctgagc 19

-

<210> 36
<211> 27
<212> DNA
<213> Artificial sequence

-

<220>
<223> Single strand DNA oligonucleotide

<400> 36
taacttaatc tggctcctga tctgccg 27

<210> 37
<211> 19
<212> PRT
<213> Homo sapiens

<220>
<221> misc_feature
<223> Active portion of human Tal

<400> 37

Val Thr Pro Thr Ala Pro Gln Glu Pro Pro Glu Ser Val Arg Pro Ser
1 5 10 15

Ala Pro Pro

<210> 38
<211> 700
<212> DNA
<213> Homo sapiens

<220>
<221> misc_feature
<223> Active portion of human Tal

<400> 38
aaagaggaag tccctggaca cagagtcact ccaggagatg atctcggagc agcgtgggc 60
cctcagctcc ctgctccagc agctgctcaa agagaagcag cagcgagagg aagagctccg 120
ggaaatcctg acggagttag aagccaaaag tgaaaccagg caggaaaatt actggctgat 180
tcagtatcaa cggttttga accagaagcc ctgtccttg aagctgcaag aagaggggat 240
ggagcgccag ctggtggccc tcctggagga gctgtcggct gagcactacc tgccatctt 300
tgcgccacc gcctctcac tggacctgt gagccaaatg agcccagggg acctggccaa 360
ggtgggcgtc tcagaagctg gcctgcagca cgagatcctc cggagagtcc aggaactgct 420

```

```

ggatgcagcc aggatccagc cagagctgaa accaccaatg ggtgaggtcg tcaccctac 480
ggccccccag gaggctcctg agtctgtgag gccatccgct cccctgcag agctggaggt 540
gcaggcctca gagtgtgtcg tgtgcctgga acgggaggcc cagatgatct tcctcaactg 600
tggccacgtc tgtgtgtgcc agcagtgtcg ccagccactg cgcacctgcc cgctgtgccg 660
ccaggacatc gcccagcgcc tccgcatcta ccacagcagc 700

```

```

<210> 39
<211> 231
<212> DNA
<213> Homo sapiens

```

```

<220>
<221> misc_feature
<223> Active portion of human Tal

```

```

<400> 39
gtcaccctta cgcccccca ggagcctcct gagtctgtga ggccatccgc tccccctgca 60
gagctggagg tgcaggcctc agagtgtgtc gtgtgcctgg aacgggaggc ccagatgatc 120
ttcctcaact gtggccacgt ctgtgtgtgc cagcagtgtc gccagccact gcgcacctgc 180
ccgctgtgcc gccaggacat cgcccagcgc ctccgcatct accacagcag c 231

```

```

<210> 40
<211> 55
<212> DNA
<213> Homo sapiens

```

```

<220>
<221> misc_feature
<223> Active portion of human Tal

```

```

<400> 40
gtcaccctta cgcccccca ggagcctcct gagtctgtga ggccatccgc tcccc 55

```

```

<210> 41
<211> 21
<212> DNA
<213> Artificial sequence

```

```

<220>
<223> SiRNA synthetic oligonucleotide

```

```

<400> 41
ccuccagucu ucucuguct t 21

```

```

<210> 42
<211> 21
<212> DNA
<213> Artificial sequence

```

```

<220>
<223> SiRNA synthetic oligonucleotide

```

```

<400> 42
ttggagguca gaagagagca g 21

```

```

<210> 43
<211> 21
<212> DNA
<213> Artificial sequence

```

<220>
 <223> SiRNA synthetic oligonucleotide

 <400> 43
 guccaaaggu uccggagact t 21

 <210> 44
 <211> 21
 <212> DNA
 <213> Artificial sequence

 <220>
 <223> SiRNA synthetic oligonucleotide

 <400> 44
 ttcagguuuc caaggccucu g 21

 <210> 45
 <211> 21
 <212> DNA
 <213> Artificial sequence

 <220>
 <223> SiRNA synthetic oligonucleotide

 <400> 45
 ucaccucacu ucccugcuut t 21

 <210> 46
 <211> 21
 <212> DNA
 <213> Artificial sequence

 <220>
 <223> SiRNA synthetic oligonucleotide

 <400> 46
 ttaguggagu gaaggacga a 21

 <210> 47
 <211> 21
 <212> DNA
 <213> Artificial sequence

 <220>
 <223> SiRNA synthetic oligonucleotide

 <400> 47
 ugcugacuga ggcuguaat t 21

 <210> 48
 <211> 21
 <212> DNA
 <213> Artificial sequence

 <220>
 <223> SiRNA synthetic oligonucleotide

 <400> 48
 uuacagcucu cagucagcat t 21

 <210> 49
 <211> 21
 <212> DNA
 <213> Artificial sequence

 <220>
 <223> SiRNA synthetic oligonucleotide

<400> 49
aaugucgaga gucagucgut t 21

<210> 50
<211> 21
<212> DNA
<213> Artificial sequence

<220>
<223> SiRNA synthetic oligonucleotide

<400> 50
acgacugacu cugacauut t 21

<210> 51
<211> 23
<212> PRT
<213> Artificial sequence

<220>
<223> PTAP-PSAP motif synthetic peptide GFP-fusion peptide

<400> 51

Glu Val Val Thr Pro Thr Ala Pro Gln Glu Pro Pro Glu Ser Val Arg
1 5 10 15

Pro Ser Ala Pro Pro Ala Glu
20

<210> 52
<211> 28
<212> DNA
<213> Artificial sequence

<220>
<223> Single strand DNA oligonucleotide

<400> 52
aagaattcag aggtcggtcac ccctacgg 28

<210> 53
<211> 25
<212> DNA
<213> Artificial sequence

<220>
<223> Single strand DNA oligonucleotide

<400> 53
aaggatccct ctgcaggggg agcgg 25